## WHAT IS CLAIMED IS:

3    1.      A method of calibrating modeling equations with measurement data comprising the

4    steps of:

5            representing the measurement data in a predetermined data structure format;

6            associating the measurement data with related information within the predetermined

7    data structure format;

8            calibrating a modeling equation using a default calibration scheme with the

9    measurement data and the related information;

10           calculating a judging factor to determine the acceptability of the calibrated modeling

11   equation;

12           comparing the judging factor to a standard to determine whether the calibrated

13   modeling equation is acceptable;

14           determining an adjustment direction to minimize the difference between the judging

15   factor and the standard;

16           adjusting the calibrated modeling equation using the adjustment direction;

17           recalculating the judging factor, recomparing the judging factor with the standard,

18   redetermining the adjustment direction and readjusting the calibrated model equation until the

19   calibrated modeling equation is acceptable.

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21   2.      The method of claim 1, wherein the predetermined data structure format is a matrix.

1       3.      The method of claim 2, wherein the measurement data is associated with the related

2       information by being in the same row of the matrix.

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4       4.      The method of claim 1, wherein the default calibration scheme is a modified Newton

5       second order gradient search algorithm.

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7       5.      The method of claim 1, wherein the modeling equation is used for determining radio

8       propagation.

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10      6.      The method of claim 1, further comprising:

11      accepting the calibrated modeling equation if the judging factor meets or exceeds the

12      standard.

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14      7.      The method of claim 1, further comprising:

15      accepting the calibrated modeling equation if the judging factor is less than the

16      standard.

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18      8.      A method of claim 1, further comprising a step of deleting portions of the

19      measurement data and related information used in calibrating the modeling equation.

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21      9.      The method of claim 1, further comprising a step of selecting a modeling equation

22      from a list of possible equations.

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1    10.    The method of claim 1, further comprising a step of inputting a modeling equation to

2    be used in determining the calibrated modeling equation.

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4    11.    The method of claim 1, further comprising:

5    calibrating the modeling equation using a secondary calibration technique.

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7    12.    The method of claim 11, wherein the secondary calibration technique is a pseudo-

8    exhaustive technique.

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10    13.    The method of claim 1, wherein the standard is modified during the time the

11    calibrated modeling equation is determined.

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13    14.    The method of claim 1, wherein the size of the adjustment of the calibrated equation

14    using the adjustment direction is dependent on the difference between the judging factor and

15    the standard.

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17    15.    A method of calibrating radio modeling equations with measurement data comprising

18    the steps of:

19    representing the measurement data in a predetermined data structure format;

20    associating the measurement data with related information within the predetermined

21    data structure format;

22    calibrating a modeling equation using a default calibration scheme with the

23    measurement data and the related information;

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1    calculating a judging factor to determine the acceptability of the calibrated modeling

2    equation;

3    comparing the judging factor to a standard to determine whether the calibrated

4    modeling equation is acceptable;

5    determining an adjustment direction to minimize the difference between the judging

6    factor and the standard;

7    adjusting the calibrated modeling equation using the adjustment direction;

8    recalculating the judging factor, recomparing the judging factor with the standard,

9    redetermining the adjustment direction and readjusting the calibrated model equation until the

10    calibrated modeling equation is acceptable.

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12    16.    The method of claim 15, wherein the predetermined data structure format is a matrix.

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14    17.    The method of claim 16, wherein the measurement data is associated with the related

15    information by being in the same row of the matrix.

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17    18.    The method of claim 15 wherein the default calibration scheme is a modified Newton

18    second order gradient search algorithm.

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20    19.    The method of claim 15, wherein the modeling equation is used for determining radio

21    propagation.

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23    20.    The method of claim 15, further comprising:

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1    accepting the calibrated modeling equation if the judging factor meets or exceeds the

2    standard.

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4    21.    The method of claim 15 further comprising:

5    accepting the calibrated modeling equation if the judging factor is less than the standard.